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PCT09

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/936,869

DATE: 05/02/2002

TIME: 14:20:47

Input Set : A:\256351.txt

Output Set: N:\CRF3\05022002\I936869.raw

P.6

3 <110> APPLICANT: Carter Holt Harvey Limited
 4 Fletcher Challenge Forests Limited
 5 Michigan Technological University
 6 Podila, Gopi Krishna
 7 Liu, Jun-Jun
 8 Karnosky, David F
 10 <120> TITLE OF INVENTION: Plants Having Modified Reproductive Activity
 12 <130> FILE REFERENCE: 25635 MRB
 C--> 14 <140> CURRENT APPLICATION NUMBER: US/09/936,869
 C--> 15 <141> CURRENT FILING DATE: 2002-03-29
 17 <150> PRIOR APPLICATION NUMBER: NZ334715
 18 <151> PRIOR FILING DATE: 1999-03-17
 20 <160> NUMBER OF SEQ ID NOS: 17
 22 <170> SOFTWARE: PatentIn Ver. 2.1
 24 <210> SEQ ID NO: 1
 25 <211> LENGTH: 1320
 26 <212> TYPE: DNA
 27 <213> ORGANISM: Pinus radiata
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 31 atacataaca agcggtgata tactctgact gccactgtac ttgaggaaag gtagtggact 120
 32 ctgctcaggt acattagttt ggtaagggtt gcttggcttc tggtaatat gagaagtaaa 180
 33 gaagtaaaag gtatttgact ctgtcaagt acattggatt gcctttgtcg gggcttggat 240
 34 ggcttgggtt cgtgtgagaa gccaacaatt tataagaaat atataaaata aaaaataaaa 300
 35 aaatttaagt gttggaagtg aaaacggtg ggcagaaata tacacagaag agtactttaa 360
 36 caatgcgcaa ccaaggcaga ttccacaactt gatttctgga cctcgaatac gagataatgg 420
 37 tggtaagaaa taaaggaaga gtggagtgc tttgaaaatg aatggagagc gcacaaaatg 480
 38 gaggacgaat aaatgaaata taatgcaaga gtgcatttcc ctattatttc cagaaatgta 540
 39 tatgtgggtt cggcattcac atgggcgtcg cattcagggg gtgtcatagc ggtccttga 600
 40 ttgcagtgtg ggagttgaa catgtaccaa caaatccatt catccaaaa cctaaattta 660
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 49 tctgaaaaag atttgggtt agaaaacaac gattgtaata ttgcttaag ttgagctaa 1200
 50 ggggtttgggt acctaacttg cttgtgggtt atttgggtt cagaactcgg gctgcgtcca 1260
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Input Set : A:\256351.txt

Output Set: N:\CRF3\05022002\I936869.raw

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 57 <213> ORGANISM: *Pinus radiata*
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 62 ctgctcaggt acattagttt ggttaggttg gcttggcttc tggtaatat gagaagtaaa 180
 63 gaagtaaaag gtatttgact ctgtcaagt acattggatt gccttgcg gggcttggat 240
 64 ggcttgggtt cgtgtgagaa gccaacaatt tataagaaat atataaaaata aaaaataaaa 300
 65 aaatttaagt gtttggaaatg aaaacgggtgg ggcagaaaata tacacagaag agtactttaa 360
 66 caatgcgcaa ccaaggcaga ttcacaactt gatttctgga cctcgaatac gagataatgg 420
 67 tggtaagaaa taaaggaaga gttggagtgc tttgaaaatg aatggagagc gcacaaaatg 480
 68 gaggacgaat aaatgaaata taatgcaaga gtgcatttcc ctattatttc cagaaatgt 540
 69 tatgtgggtt cggcatttcac atgggcgtcg cattcagggg gtgtcatagc ggtccttga 600
 70 ttgcagtgtg ggagttgcaa catgtaccaa caaatccatt catcccaaaa cctaaattt 660
 71 tcctctccat tactattacc tacacctata cctagtaat atgtcctgcc ttgttaactcc 720
 72 tccactgcct gcacacgtct tagtcaatcc atctgccttc aaataggcat tattttgttc 780
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 74 tttttctgc tggatcatca tcattaccat catcgccatc cccaccatca tcatcatgtat 900
 75 ggtatctcta tctctccctg gcaatcgatt gtagaggaaa ggaagaggga agggcataat 960
 76 gtattgtatca acctaccgcg aaaaacaatc tgatcagccc tgctcaatct tgcttataaa 1020
 77 tctcttatcc actgttcaat cattcaggtt tcttccact ttcaagcaaa ggcgcggga 1080
 78 ttggccgtgt tcttagattt tcaggtactt aaatggacaa tattcccac ctgaagccgt 1140
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 81 actgttaggaa cgaaccagca caaggggttg cagctttgc ttgtgtgtt ggcgcattt 1320
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 83 cgaaaaatttt gtgtacaaat c 1401
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 89 <213> ORGANISM: *Pinus radiata*
 91 <220> FEATURE:
 92 <221> NAME/KEY: CDS
 93 <222> LOCATION: (1)..(669)
 94 <223> OTHER INFORMATION: *Pinus radiata* MADS box protein mRNA, complete cds
 96 <300> PUBLICATION INFORMATION:
 97 <301> AUTHORS: Jun-Jun, Liu
 98 Podila, G K.
 99 <302> TITLE: Not applicable
 100 <303> JOURNAL: Direct submission
 101 <304> VOLUME: -
 102 <305> ISSUE: -
 103 <306> PAGES: ---
 104 <307> DATE: 1997-09-09
 105 <308> DATABASE ACCESSION NO: Genbank AF023615
 106 <309> DATABASE ENTRY DATE: 1999-01-26
 107 <313> RELEVANT RESIDUES: 1 TO 909
 109 <400> SEQUENCE: 3
 110 atg ggt cgt ggg aag att gag ata aag agg att gaa aat act acg aac 48

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111 Met Gly Arg Gly Lys Ile Glu Ile Lys Arg Ile Glu Asn Thr Thr Asn
112 1 5 10 15
114 cga cag gtc act ttc tgc aag cgc cga aat ggt tta tta aag aag gcg 96
115 Arg Gln Val Thr Phe Cys Lys Arg Arg Asn Gly Leu Leu Lys Lys Ala
116 20 25 30
118 tat gaa tta tca gtt ctt tgt gat gca gaa gtg gcc ctc atc gtc ttc 144
119 Tyr Glu Leu Ser Val Leu Cys Asp Ala Glu Val Ala Leu Ile Val Phe
120 35 40 45
122 tcc agc aga ggg aga ctt tat gaa ttt gcc aac cac agc gtg aag agg 192
123 Ser Ser Arg Gly Arg Leu Tyr Glu Phe Ala Asn His Ser Val Lys Arg
124 50 55 60
126 acg att gag agg tac aag aag act tgc gtt gac aac aac cac gga ggg 240
127 Thr Ile Glu Arg Tyr Lys Lys Thr Cys Val Asp Asn Asn His Gly Gly
128 65 70 75 80
130 gcg ata tca gag tcc aat tct cag tat tgg caa cag gag gct ggt aaa 288
131 Ala Ile Ser Glu Ser Asn Ser Gln Tyr Trp Gln Gln Glu Ala Gly Lys
132 85 90 95
134 ctc aga caa cag att gac att ttg caa aat gca aat agg cat ttg atg 336
135 Leu Arg Gln Gln Ile Asp Ile Leu Gln Asn Ala Asn Arg His Leu Met
136 100 105 110
138 ggt gac ggg ctt aca gct ttg aac att aag gaa ctc aag caa ctt gag 384
139 Gly Asp Gly Leu Thr Ala Leu Asn Ile Lys Glu Leu Lys Gln Leu Glu
140 115 120 125
142 gtt cga ctt gaa aaa gga atc agc cga gtg cga tcc aaa aag aac gag 432
143 Val Arg Leu Glu Lys Gly Ile Ser Arg Val Arg Ser Lys Lys Asn Glu
144 130 135 140
146 atg ttg ctt gaa gag atc gac atc atg cag aga agg gaa cac ata ctt 480
147 Met Leu Leu Glu Glu Ile Asp Ile Met Gln Arg Arg Glu His Ile Leu
148 145 150 155 160
150 atc cag gag aat gag att ctt cgc agc aag ata gcc gag tgt cag aat 528
151 Ile Gln Glu Asn Glu Ile Leu Arg Ser Lys Ile Ala Glu Cys Gln Asn
152 165 170 175
154 agc cac aac acg aac atg tta tca gct ccg gaa tat gat gca ctg ccc 576
155 Ser His Asn Thr Asn Met Leu Ser Ala Pro Glu Tyr Asp Ala Leu Pro
156 180 185 190
158 gca ttc gac tct cga aat ttc cta cat gca aat cta atc gat gcg gcc 624
159 Ala Phe Asp Ser Arg Asn Phe Leu His Ala Asn Leu Ile Asp Ala Ala
160 195 200 205
162 cat cac tat gca cat cag gaa caa aca acg ctt cag ctt ggc tga 669
163 His His Tyr Ala His Gln Glu Gln Thr Thr Leu Gln Leu Gly
164 210 215 220
166 acgttgaagc ggtggacgct taaaactcaa tcaaggcacc cgaaaaatat gctagtaacc 729
168 ttgaatgaga ttcatgatcg aatattgcg aggcaagagc acaatggaa agatagctcc 789
170 tagtatgaat atggatttat gatattaaca tatggttgt cagctttaaa tatacggtt 849
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176 <211> LENGTH: 222
177 <212> TYPE: PRT
178 <213> ORGANISM: Pinus radiata

RAW SEQUENCE LISTING
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 185 Tyr Glu Leu Ser Val Leu Cys Asp Ala Glu Val Ala Leu Ile Val Phe
 186 35 40 45
 187 Ser Ser Arg Gly Arg Leu Tyr Glu Phe Ala Asn His Ser Val Lys Arg
 188 50 55 60
 189 Thr Ile Glu Arg Tyr Lys Lys Thr Cys Val Asp Asn Asn His Gly Gly
 190 65 70 75 80
 191 Ala Ile Ser Glu Ser Asn Ser Gln Tyr Trp Gln Gln Glu Ala Gly Lys
 192 85 90 95
 193 Leu Arg Gln Gln Ile Asp Ile Leu Gln Asn Ala Asn Arg His Leu Met
 194 100 105 110
 195 Gly Asp Gly Leu Thr Ala Leu Asn Ile Lys Glu Leu Lys Gln Leu Glu
 196 115 120 125
 197 Val Arg Leu Glu Lys Gly Ile Ser Arg Val Arg Ser Lys Lys Asn Glu
 198 130 135 140
 199 Met Leu Leu Glu Glu Ile Asp Ile Met Gln Arg Arg Glu His Ile Leu
 200 145 150 155 160
 201 Ile Gln Glu Asn Glu Ile Leu Arg Ser Lys Ile Ala Glu Cys Gln Asn
 202 165 170 175
 203 Ser His Asn Thr Asn Met Leu Ser Ala Pro Glu Tyr Asp Ala Leu Pro
 204 180 185 190
 205 Ala Phe Asp Ser Arg Asn Phe Leu His Ala Asn Leu Ile Asp Ala Ala
 206 195 200 205
 207 His His Tyr Ala His Gln Glu Gln Thr Thr Leu Gln Leu Gly
 208 210 215 220
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 214 <212> TYPE: DNA
 215 <213> ORGANISM: Arabidopsis thaliana
 217 <220> FEATURE:
 218 <221> NAME/KEY: CDS
 219 <222> LOCATION: (16)..(795)
 220 <223> OTHER INFORMATION: Arabidopsis thaliana ribonuclease (RNS2) mRNA,
 221 complete cds
 223 <300> PUBLICATION INFORMATION:
 224 <301> AUTHORS: Taylor, C B.
 225 Bariola, P A.
 226 delCardayre, S B.
 227 Raines, R T.
 228 Green, P J.
 229 <302> TITLE: RNS2: a senescence-associated RNase of Arabidopsis that
 230 diverged from the S-RNases before speciation
 231 <303> JOURNAL: Proc. Natl. Acad. Sci. U.S.A.
 232 <304> VOLUME: 90
 233 <305> ISSUE: 11

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235 <307> DATE: 1993
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237 <309> DATABASE ENTRY DATE: 1994-10-30
238 <313> RELEVANT RESIDUES: 1 TO 1012
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243 1 5 10
245 tgt atc gcc gga gca ttt gcc gga gac gtc atc gaa ctc aat cga tct 99
246 Cys Ile Ala Gly Ala Phe Ala Gly Asp Val Ile Glu Leu Asn Arg Ser
247 15 20 25
249 cag agg gag ttc gat tat ttc gct cta tct ctt caa tgg cct gga acc 147
250 Gln Arg Glu Phe Asp Tyr Phe Ala Leu Ser Leu Gln Trp Pro Gly Thr
251 30 35 40
253 tat tgc cgt gga act cgc cat tgt tgc tcc aaa aac gct tgc tgc aga 195
254 Tyr Cys Arg Gly Thr Arg His Cys Cys Ser Lys Asn Ala Cys Cys Arg
255 45 50 55 60
257 ggc tcc gat gct cca act caa ttc aca att cat ggg tta tgg cct gac 243
258 Gly Ser Asp Ala Pro Thr Gln Phe Thr Ile His Gly Leu Trp Pro Asp
259 65 70 75
261 tat aac gat ggt tcg tgg cct tca tgt tgt tat cga tct gac ttt aaa 291
262 Tyr Asn Asp Gly Ser Trp Pro Ser Cys Cys Tyr Arg Ser Asp Phe Lys
263 80 85 90
265 gag aag gag att tca acg ttg atg gat ggt ctt gag aag tac tgg cct 339
266 Glu Lys Glu Ile Ser Thr Leu Met Asp Gly Leu Glu Lys Tyr Trp Pro
267 95 100 105
269 agt ctc agt tgt ggt tct cca tca tca tgc aat ggt ggg aaa ggg tca 387
270 Ser Leu Ser Cys Gly Ser Pro Ser Ser Cys Asn Gly Gly Lys Gly Ser
271 110 115 120
273 ttt tgg ggc cac gag tgg gag aaa cat ggg act tgt tct tct cct gtt 435
274 Phe Trp Gly His Glu Trp Glu Lys His Gly Thr Cys Ser Ser Pro Val
275 125 130 135 140
277 ttt cat gat gag tat aat tac ttc ctt acc aca ctt aat ctc tac ttg 483
278 Phe His Asp Glu Tyr Asn Tyr Phe Leu Thr Thr Leu Asn Leu Tyr Leu
279 145 150 155
281 aag cat aat gtc acg gat gtc ctt tat caa gct ggc tat gtt gct tcc 531
282 Lys His Asn Val Thr Asp Val Leu Tyr Gln Ala Gly Tyr Val Ala Ser
283 160 165 170
285 aac agt gaa aag tat cct cta gga ggt atc gta aca gcc att cag aat 579
286 Asn Ser Glu Lys Tyr Pro Leu Gly Gly Ile Val Thr Ala Ile Gln Asn
287 175 180 185
289 gca ttt cat atc acc cct gaa gtt gtt tgc aaa aga gat gca atc gat 627
290 Ala Phe His Ile Thr Pro Glu Val Val Cys Lys Arg Asp Ala Ile Asp
291 190 195 200
293 gaa ata cgt ata tgc ttc tat aaa gat ttt aag ccc agg gac tgt gtt 675
294 Glu Ile Arg Ile Cys Phe Tyr Lys Asp Phe Lys Pro Arg Asp Cys Val
295 205 210 215 220
297 ggt tca caa gat ttg aca tct aga aag tca tgc ccc aag tac gta agt 723

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 05/02/2002
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

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Seq#: 8; N Pos. 6, 12, 15